PLYMOVENT®	TECHNICAL DESCRIPTION	BSAB no: T0.7 Ser.no: OS-3 Date: NOV-00 Replace:
BLOWER OPERATING SYSTEM: OS-3		

Area of use:

OS-3 is an energy savingcontrol unit, which together with pressure sensor, temp sensor makes a fully automatic system for the control of PlymoVent's vehicle exhaust fans.

Delivery:

The control unit, OS-3, is delivered complete with functions for manual and automatic start/stop of the exhaust fan.

NOTE! The control unit, OS-3, is delivered without cable for fied wiring.Cables for field wiring must apply to UL and NEC.

General information:

OS3 controller is designed to be used for control of exhaust fans in vehicle exhaust system , with or without particle filtration system. The controller can be set for both manual and automatic control of the fan. Depending of system, different sensors for start/stop function, can be used. Mainly two types of sensors will be used; pressure sensor to detect pressure difference in systems and temperature sensors to detect temperature level in the system. The OS3 control box also includes an alarm device, which can be used for status control of the airflow in the exhaust system. A built in “after running time” function will secure that toxic gases in the duct system will be exhausted out of the ducting before the fan stops. The after running time can easily be adjusted between 7 sec. to 6 minutes.

Method of operation:

When the control unit is set into “automatic” position, the exhaust fan is started by a signal from an externally mounted pressure, or/and temperature sensor. Normally the system is activated by the pressure sensor and kept running by the temperature sensor.

Pressure sensor:

The pressure sensor reacts on increasing pressure (positive pressure) which occur in the system when a vehicle is starting up. The pressure sensor is adjustable to fit all engine sizes.

Temperature sensor:

The temperature sensor will detect the increasing temperature which occur in the system when a vehicle is running. The temperature sensor is adjustable to fit all engine sizes.

Automatic mode:

When the engine is turned on, the pressure sensor reacts and forward a signal to the control Unit. The control unit is then starting the exhaust fan.
When the engine turns off the pressure in the system decreases and the fan stops after The pre-adjusted after run time is out.

Manual mode:

When the control unit is set in manual position the exhaust fan is running continuously.

Stop mode:

When pressing the stop button, the fan will stop immediately and after a short period of time 2-3 sec. the controller will move into automatic mode. This built in function will prevent the risk of having exhaust gas leakage in the system due to operator error.

Alarm mode:

The alarm device will detect high pressure loss over the filter unit, when the Fan on LED Light flashes the pressure over the filter is to high. Filter needs to be replaced.

PLYMOVENT®	PRIMARY WIRING PROCEDURE	BSAB no: T0.7 Ser.no: OS-3 Date: NOV-00 Replace:
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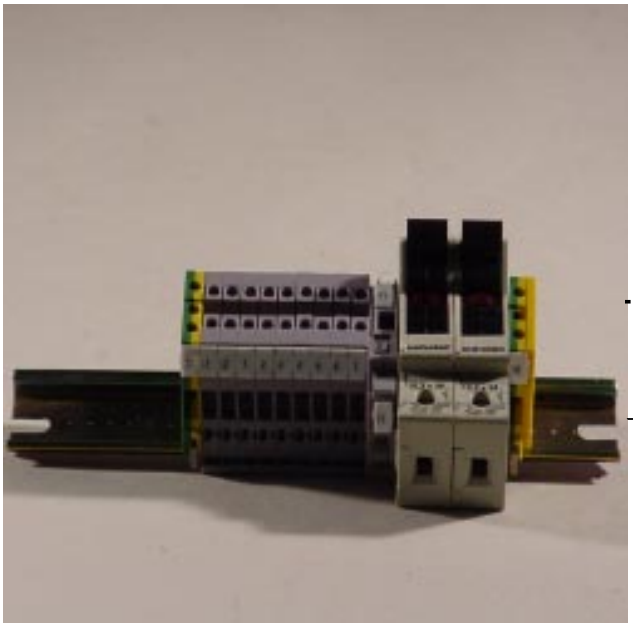
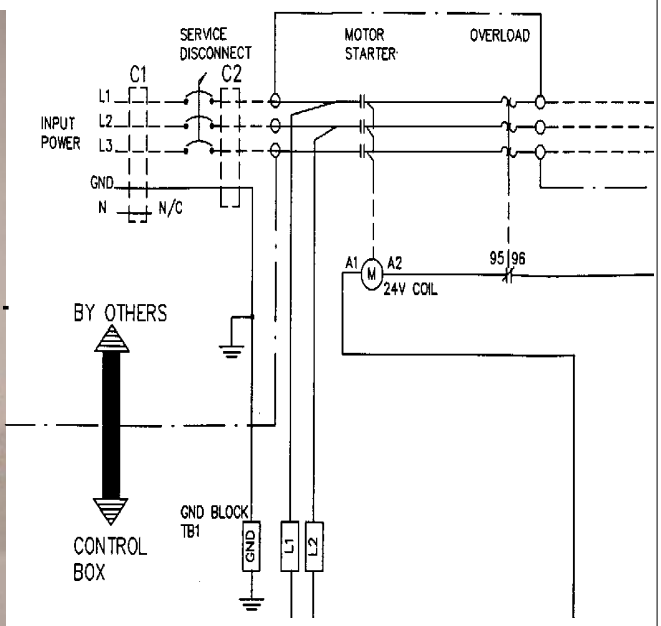
1. Terminal block # 1: Located in the lower left hand corner of the OS-3 controller box consist of primary electrical terminal blocks (L1,L2,GND), control wiring blocks (1 trough 7) and electrical overload fuses for protection for both primary (F1,F2 / 2 Amp.) and secondary (F3 / 3 Amp.). **NOTE: Primary line voltage must not be greater or less than 8 % of rated voltage listed on voltage tap. Ex. Tap 120 volt (110 – 130 voltage variant acceptable) for power nets acceptable to fluctuating line voltage a buck boost transformer will be required. (Supplied by others)**

2. Primary voltage wiring: On the left side of the terminal block you view the first block marked GND (green ground) where you will connect your ground wire (minimum 12 AWG/2,5 mm²). The second terminal block marked L1 you will connect your first power wire (minimum 12 AWG/2,5 mm²) from L1 on the primary side of the contactor .The third terminal block marked L2 you will connect your second power wire (minimum 12 AWG/2,5 mm²) from L2 on the primary side of the contactor. NOTE: Both L1 and L2 power wires are only jumper wires from the primary side of the contactor . The line supply voltage from your building, which will supply your motor, shall be connected directly to L1,L2 (single phase) and L1,L2,L3 (3-phase). Re-check that rated voltage corresponds with supply voltage to avoid damage to electrical component or control wiring.

3. Field wiring of fuse panel and safety disconnect: The primary wiring of the electrical system must be rated for the maximum Amps. load as well as the wiring resistance drop, which is calculated for the distance, you are running. See your local electrical building code for proper wiring sizing. NOTE: Field wiring, fuse panel and safety disconnect provided by others.





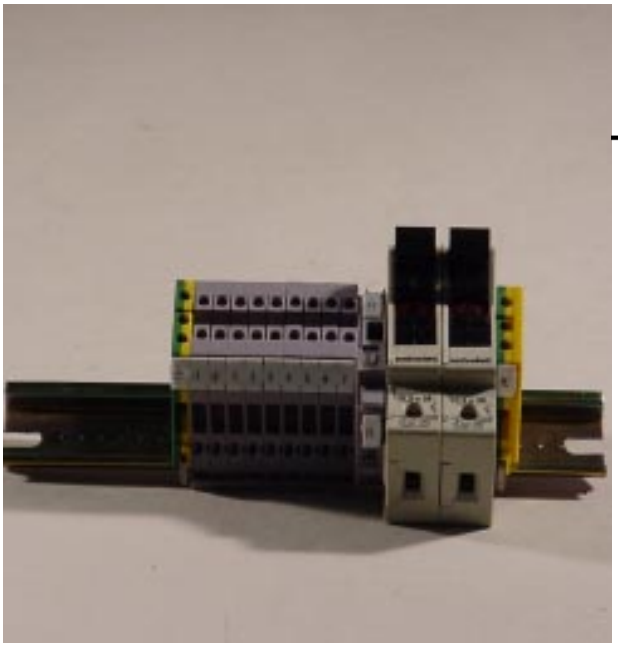
PLYMOVENT®	PRIMARY WIRING PROCEDURE (CONTROL WIRING)	BSAB no: T0.7 Ser.no: OS-3 Date: NOV-00 Replace:
BLOWER OPERATING SYSTEM: OS-3		

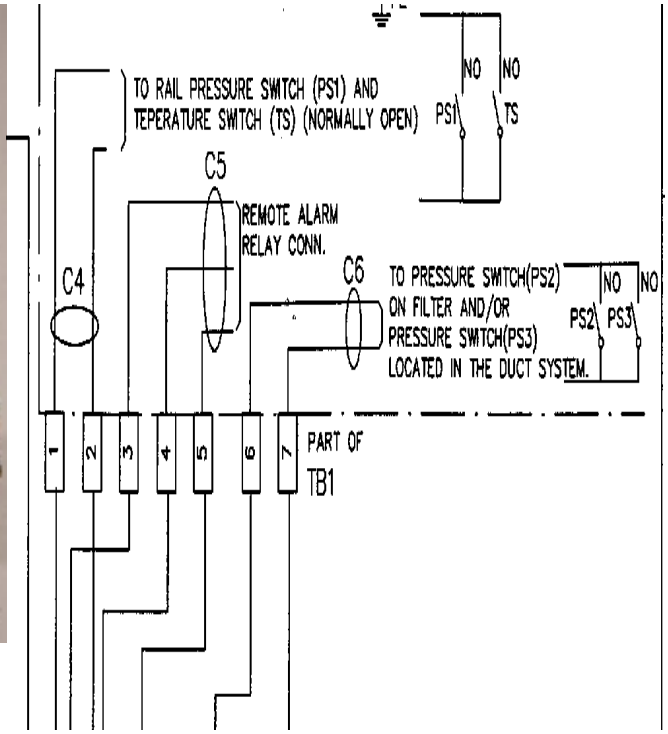
1. Control voltage wiring: The terminal blocks 1 to 7 are used for control wiring of remote mounted pressure switches for starting functions, clean filter indicator and temperature switch. An optional remote alarm relay connection is available.

2. Pressure/ temperature switch (engine start/ stop): The temperature and pressure switch, which is sold separately, will be wired to terminal block 1 and 2. If more than one pressure/temperature switch is utilized in system they must be wired in parallel to achieve proper operation. NOTE: Control wires supplying terminal block 1 and 2 must be 14 AWG/1.5 mm², smaller wire sizing resulting improper system operation. NOTE: Manual push button start can also be placed in parallel in this circuit.

3. Remote alarm (optional): Commonly used with veritable speed controllers, to support alarm functions for defective motors, loss of power and computer interfaces. Terminal blocks 3 provides common connection, 4 provides normally closed connection and 5 provides normally open connection. NOTE: Relay output is potential free and will require additional control equipment depending on its use.

4. Pressure switch (filter alarm): PlymoVent offers as part of its standard product a exhaust ventilation filter (Multi Smoke Filter) which is provided with an adjustable pressure indicator switch, which monitors the filters useful life. Terminals 6 and 7 (potential free) are utilized to connect and operate the pressure indicator switch. When the filter becomes dirty the pressure switch will send a signal to the controller card an in-turn will flash the fan indicator light, located on the face of the OS-3 control panel, when the fan motor is in running position.





PLYMOVENT®

WIRING DIAGRAM

BSAB no: T0.7
Ser.no: OS-3
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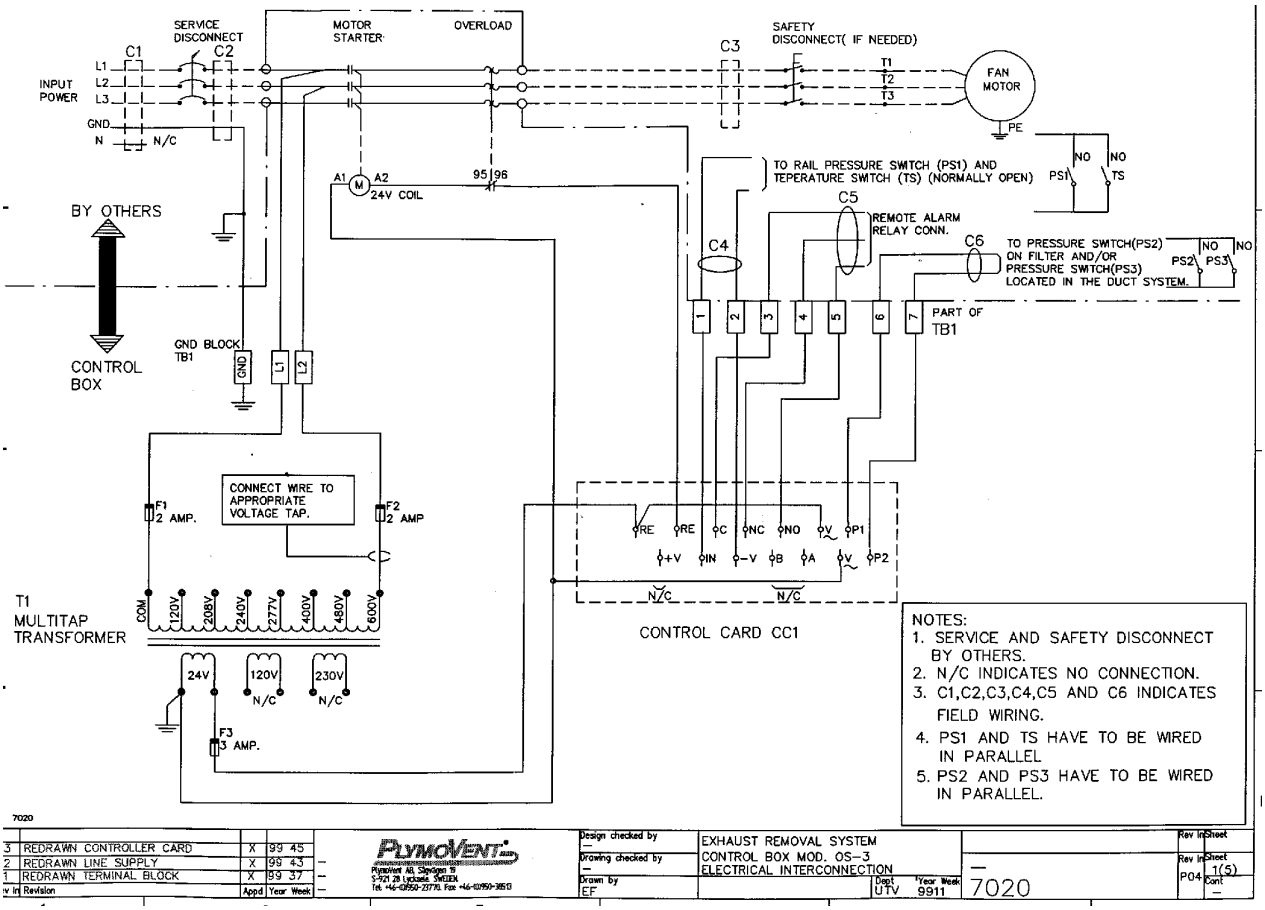
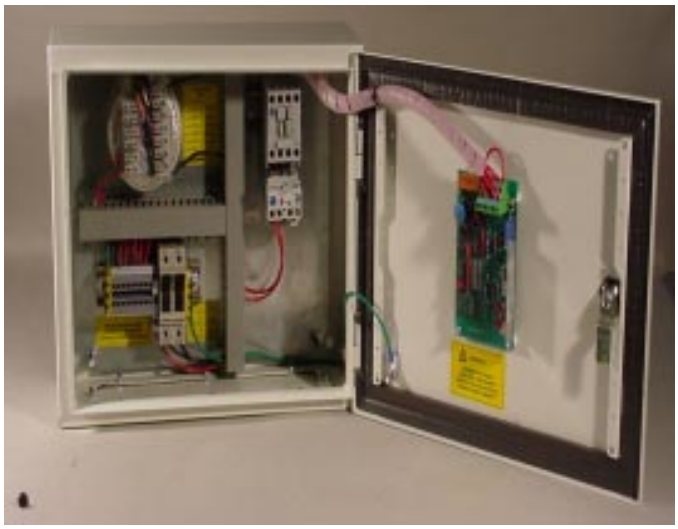
Replace:

BLOWER OPERATING SYSTEM: OS-3





Notes:

.1. Control wires must be 14 AWG/1.5mm2, smaller wire sizing resulting in improper system operation.

2. All wiring must be done by certified/ licensed electrician.

3. Primary line voltage must not be greater or less than 8% of rated voltage listed on voltage tap.

4. The secondary voltage connections are preset from the factory and shall never be changed. Changing voltage on secondary side will result in damage to the electrical components.

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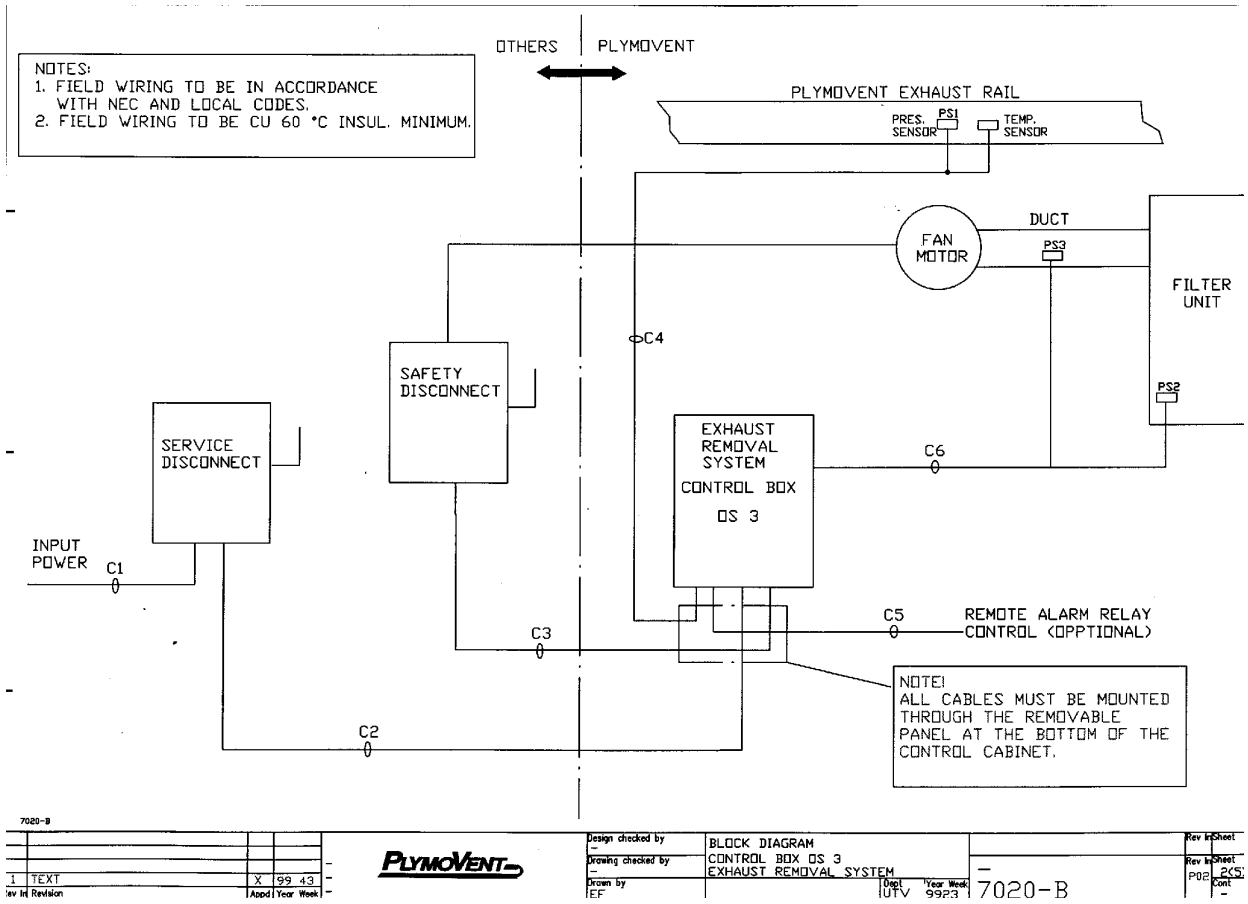

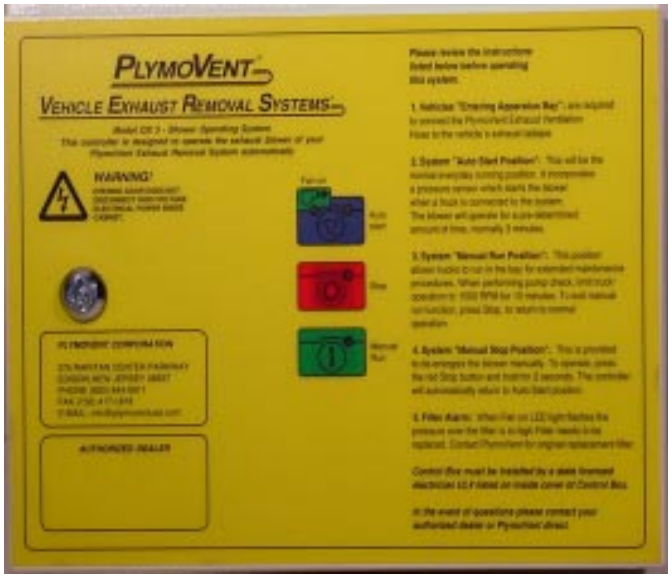

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